



Pharmacy

July/August 1998

Update

Drug Information Service
Pharmacy Department
Warren G. Magnuson Clinical Center
National Institutes of Health
Bethesda, Maryland 20892-1196

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In This Issue

- ☛ **Welcome, New Medical Staff Fellows**
- ☛ **A Few Facts**
- ☛ **Clinical Pharmacy Specialists**
- ☛ **Pharmacy Phone Numbers**
- ☛ **Pharmacy Residency Appointments 1998-1999**
- ☛ **Restricted Medications**

Welcome, New Medical Staff Fellows

The pharmacy staff welcomes you and would like to introduce you to the variety of services we offer in support of patient care and biomedical research.

Inpatient Pharmacy

The inpatient pharmacy provides medications for hospitalized patients. All medication orders are reviewed by pharmacists before dispensing to the nursing units. Using the patient's medication profile, pharmacists review orders for allergies, appropriateness of dose and dosing interval, drug interactions, and drug incompatibilities. The unit dose staff prepares medications for patient use, each dosage form having been individually packaged and labeled. Parenteral preparations, including injectable investigational drugs, are prepared under rigorous standards for sterility and quality control by the Intravenous Admixture Unit staff or by the Oncology Satellite. Inpatient services are available on a 24-hour basis from the central pharmacy.

Clinical Pharmacy

Pharmacists with advanced clinical training and experience are assigned to critical care, endocrinology, gastroenterology, neurology, ambulatory care, mental health, oncology, bone marrow transplantation, allergy, and infectious diseases. Their functions include providing patient-specific drug-use advice, participating in drug selection, monitoring patient response to therapy, serving as IRB members, counseling patients, and participating in experimental drug protocol design and implementation.

Outpatient Pharmacy

The outpatient pharmacy dispenses prescriptions and provides medication counseling for outpatients, patients on pass, and discharged patients. Medications supplied by the outpatient pharmacy must be protocol-related and are typically limited to a 90-day supply. The outpatient pharmacy is open from 8:30 a.m. to 6 p.m., Monday through Thursday, 8:30 a.m. to 8 p.m. on Friday, and 8:30 a.m. to 12:30 p.m. on weekends and holidays. Only emergency outpatient prescriptions are filled after hours.

Drug Information Service

The Drug Information Service is available to assist clinicians with routine and complex pharmacotherapeutic questions and case consultations. The NIH Drug Information Service (DIS) is equipped with information resources including texts, journals, abstracting services, and online and CD-ROM drug information data bases. The DIS is also responsible for evaluating and monitoring adverse drug reactions reported by healthcare personnel.

Additionally, the DIS is the principal resource to the Pharmacy and Therapeutics Committee for evaluating medications, biologicals, and drug-delivery systems, and reviewing and developing medication-related policies and procedures. The DIS also provides assistance with study design, protocol development, and critical literature evaluation.

Procurement and Control

The quality control and purchasing of drugs dispensed for patient care are the responsibilities of the Pharmaceutical Procurement and Control Section. This unit purchases all drugs and pharmaceutical supplies authorized for use at the Clinical Center and maintains the formulary of approved drugs.

Pharmaceutical Development

The Pharmaceutical Development Section (PDS) provides research-related functions as follows: 1) registration and control of all investigational drugs used for patients, 2) formulation of unique dosage forms of both commercially available and investigational drugs, 3) assaying investigational drugs and providing summaries of these data to support the submission of investigational new drug (IND) applications, 4) conducting quality control and stability studies for all products manufactured by the Department, 5) aiding investigators in designing blinded studies, and 6) providing information on investigational drugs. Investigational drugs must be registered with PDS before they are administered to Clinical Center patients.

Clinical Pharmacokinetics

The Clinical Pharmacokinetics Research Laboratory (CPRL) of PDS assists clinical investigators in the design, analysis, and interpretation of pharmacokinetic studies. The CPRL supports physicians in several major areas of pharmacokinetics research including modelling of drugs and/or metabolites, examination of concentration-effect relationships, drug interaction studies, and characterization of drugs with nonlinear disposition. In addition, the CPRL provides consultations on individual patients regarding pharmacokinetic aspects of drug therapy.

*Charles E. Daniels, Ph.D.
Chief, Pharmacy Department*

A Few Facts

Outpatient, Discharge, and On Pass Prescriptions

Physicians should enter any discharge or *on pass* medications for their patients into MIS the day before the event, or during the morning hours on weekends and holidays. Outpatient prescriptions, discharge medication orders, and prescriptions for patients on pass will be filled only during the Outpatient Pharmacy's scheduled hours of operation.

Prescribing Restricted Antimicrobials

When prescribing restricted anti-microbials from the MED INDEX in MIS, the following message will appear:

You have selected a restricted antimicrobial. The Pharmacy Department will not act on this order until it is approved by an ID consultant via a telephone call to the Pharmacy.

Prescribers are obliged to...

- ☛ Complete the order in MIS
- ☛ Contact the ID Fellow directly or through the Clinical Center Page Operator (496-1211)
- ☛ If the ID fellow is unavailable or does not respond, the prescriber should contact the assigned ID attending physician (page operators have the current coverage schedule).

Note

The Pharmacy will not dispense a first dose of a restricted antimicrobial without ID approval.

Orders for restricted antimicrobials included as adjunctive therapy in NIH studies must be entered into MIS by physicians authorized to prescribe restricted agents for their patients. Otherwise, ID approval is required.

Although ID approval may have been granted for a restricted antimicrobial during a patient's prior admission, retreatment with the same restricted antimicrobial is contingent upon ID reapproval.

The following antimicrobials have been designated as restricted:

- ☛ Abelcet® and AmBisome®
- ☛ Alatrofloxacin
- ☛ Ceftazidime
- ☛ Cidofovir
- ☛ Ciprofloxacin (oral and i.v. formulations)
- ☛ Fluconazole (i.v. formulation only)
- ☛ Foscarnet
- ☛ Ganciclovir (oral and i.v. formulations)
- ☛ Imipenem/cilastatin (Primaxin®)
- ☛ Itraconazole

Clinical Pharmacy Specialists

Paul Jarosinski, P.D.	NCI/Pediatric Oncology	104-2220-7
Barry Goldspiel, Pharm.D.	NCI/Medicine Branch	104-4650
David Kohler, Pharm.D.	NCI/Medicine Branch	104-2218-7
Michelle Plante, Pharm.D.	NHLBI/BMT/NCI Surgery	104-4651
Cara Alfaro, Pharm.D.	NIMH	
Stephen Piscitelli, Pharm.D.	NIAID/Pharmacokinetics	104-3044-7
Gregory Susla, Pharm.D.	MICU and NINDS	104-4150-7
Frank Pucino, Pharm.D.	Ambulatory Care Services	104-3043-7
Alice Pau, Pharm.D.	NIAID	104-2240-7
Bill Knebel, Pharm.D.	NIMH/Pharmacokinetics	104-2239-7
Karim Calis, Pharm.D., M.P.H.	NICHD/Endocrinology & Genetics	104-2619-7
	NIDDK/Endocrinology & Gastroenterology	
	NIH Drug Information Service	

- ☛ Levofloxacin (i.v. formulation only)
- ☛ Tobramycin (inhalation form only)
- ☛ Vancomycin (oral formulation only)

Scheduled (C^{II}) Drugs

All "TAKE HOME" orders for schedule II drugs for outpatients require that an order signed by the prescribing physician must be sent to the outpatient pharmacy before the medication can be dispensed to patients.

Prescription Blanks

Blank prescription forms are available in the Outpatient Pharmacy (1st floor) and will be dispensed only to physicians, nurses, and pharmacists. Persons requesting prescription blanks must present their Clinical Center identification and sign for the forms they receive.

Total Parenteral Nutrition:

All orders for parenteral nutrition (TPN) received in the Pharmacy Department by 2 p.m. will be delivered to the patient care unit by 6 p.m. Orders for outpatients or patients who will be discharged on TPN should be entered before 11 a.m. so they can be ready for pick-up after 3 p.m.

Physician's DEA Registration

Section 1301.25 of the Federal Controlled Substance Act Regulations provide that all physician practitioners employed by the Public Health Service may use their service number (i.e., Social Security number) and branch of service or service agency on all prescriptions issued in lieu of a DEA registration number (*Note: you do not need to provide your Social Security number for controlled substances filled by the Clinical Center Outpatient Pharmacy*). For additional information, contact a pharmacist in the Pharmacy Procurement Section (496-9358) or write or call:

Registration Board Drug Enforcement Agency

P. O. Box 28033
Central Station
Washington, DC 20005
Telephone (202) 307-7255

Pharmacy Phone Numbers

Drug Information Service	6-2407
Intravenous Admixture Unit	6-6551
Office of the Chief	6-4363
Oncology Satellite	6-8092
Outpatient Pharmacy	6-2866
Pharmaceutical Development Section (PDS)	6-1031
Pharmaceutical Procurement and Control	6-9358
Unit Dose Distribution Unit	6-1914

Pharmacy Residency Appointments 1998-1999

Grace M. Kuo, Pharm.D.
Oregon State University
Resident in Primary Care Pharmacy Practice
Frank Pucino, Pharm.D.
Program Director

Nishaat Saini, Pharm.D.
University of Florida
Resident in Oncology Pharmacy Practice
Barry R. Goldspiel, Pharm.D.
Program Director

Doreen Chey, Pharm.D.
University of California – San Francisco
Pharmacy Practice Resident
Gregory M. Susla, Pharm.D.
Program Director

Maryam R. Mohassel, Pharm.D.
Philadelphia College of Pharmacy and Science
Resident in Drug Information Practice
and Pharmacotherapy
Karim Anton Calis, Pharm.D., M.P.H.
Program Director

Restricted Medications

The following is a list of non-antimicrobial drugs on which some form of restriction has been placed by the Pharmacy and Therapeutics Committee:

- ☛ **Amiodarone (Cordarone®)**
Restricted to the Cardiology Service
- ☛ **Clozapine (Clozaril®)**
Restricted to use by physicians from NIMH and NINDS
- ☛ **Dornase Alfa (Pulmozyme®)**
Restricted for use in patients with cystic fibrosis (inpatient use only)
- ☛ **EMLA® Cream**
This is a eutectic mixture of lidocaine and prilocaine which is used in pediatric or adult patients to reduce the pain associated with venipuncture, intravenous cannulation (especially in children in whom intravenous access is difficult), lumbar puncture, and certain dermatologic procedures. This drug should not be routinely used on mucous membranes or prior to subcutaneous or intramuscular injections.
- ☛ **Enoxaparin (Lovenox®)**
Restricted to the Clinical Hematology Service

- ☛ **Epoetin Alfa (Epogen® or Procrit®)**
Drug use is evaluated through queries in MIS order screens
- ☛ **Filgrastim (Neupogen®)**
Drug use is evaluated through queries in MIS order screens
- ☛ **Granisetron (Kytril®)**
Usage guidelines were described in the May/June 1997 issue of *Pharmacy Update*
- ☛ **Ondansetron (Zofran®)**
Usage guidelines were described in the May/June 1997 issue of *Pharmacy Update*
- ☛ **Mexiletine (Mexitil®)**
Restricted to the Pain Management Service (for neuropathic pain)
- ☛ **Tizanidine (Zanaflex®)**
Use requires approval by the NINDS Neurology Consultation Service

Drug Information Service

- ☛ Patient-specific pharmacotherapy evaluations and recommendations
- ☛ Comprehensive information about medications, biologics, and nutrients
- ☛ Critical evaluation of drug therapy literature
- ☛ Assistance with study design and protocol development
- ☛ Clinical trial drug safety monitoring
- ☛ Investigational drug information
- ☛ Parenteral nutrition assessment and monitoring

496-2407

**Pager #104-2619-7 or 104-5264
Building 10, Room 1N-257**



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